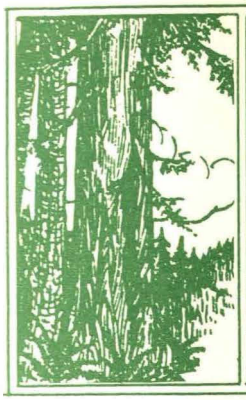
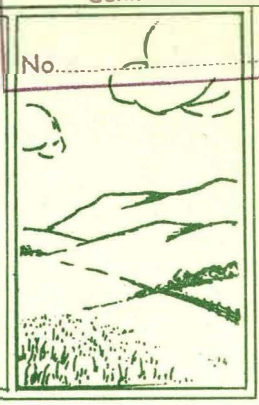
INTERMOUNTAIN STATION
Central Reference File
No. 1 0.73



FOREST RESEARCH NOTES

U.S.DEPARTMENT OF AGRICULTURE
FOREST SERVICE
CALIFORNIA FOREST AND RANGE
EXPERIMENT STATION *

STEPHEN N. WYCKOFF, Director



Research Note No. 69 June 1, 1950

CHECK LIST FOR INSPECTION OF LUMBER DRY KILNS

By Harvey H. Smith, Forest Products Technologist

Lumber dry kilns are production machines that require careful attention and maintenance to keep them in good working order. Too often, too much is taken for granted regarding their general operating condition, and they fall into a state of disrepair that makes good drying difficult or outright impossible. This note suggests one type of check list that may be used as a guide for use by the kiln operator or other qualified person in making routine inspections of buildings and equipment. Management may also find this form useful in having inspections made and reported at regular intervals.

The need for such regular inspection was forcefully revealed by kiln certification studies of all types of kilns, made during the war by technicians from the Forest Products Laboratory, Madison, Wisconsin. Many kilns could not meet the established requirements because poor maintenance or faulty adjustment of kiln parts made accurate control of temperature and humidity impossible. This study provided the basis for the attached check list.

Periodic examination of the kiln building and kiln equipment may reveal faulty conditions that can be corrected immediately at little cost. Neglect of these conditions can lead to expensive repairs or replacements. For example, poor drying may result from as simple an oversight as failure to replace the wet-bulb wick regularly, thus allowing the old wick to become incrusted with debris that results in faulty humidity control. Lack of proper air baffles, either because of omission from the original installation or because of poor repair of existing equipment, may lead to greatly reduced air circulation through the loads of lumber. Leaks in the steam heating and spray systems may waste steam and necessitate excessive venting. Waterlogged coils and traps may result in uneven heating throughout the kiln, which in turn will cause uneven drying. Such examples can be cited for most of the items listed in the check list.

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KILN INSPECTION CHECK LIST

(Where maintenance or replacement is recommended, indicate kiln number.)

I. AIR CIRCULATION SYSTEM

1. Fans and motors, present condition: _____
   Condition of electrical connections and switches: _____
   What maintenance or replacement is recommended: _____

2. Shafts and bearings, present condition: _____
   Are motor and shaft bearings properly lubricated: _____
   What maintenance or replacement is recommended: _____

3. Fan baffles, present condition: _____
   What maintenance or replacement is recommended: _____

4. Load baffles, present condition: _____
   Can load baffles be improved: _____
   What maintenance or replacement is recommended: _____

5. Air passageways
   Are air passageways open and unobstructed: _____
   Could air movement be improved: _____
   What maintenance or replacement is recommended: _____

II. HEATING AND HUMIDIFYING SYSTEM

1. Feed lines and headers, present condition: _____
   Are they properly insulated: _____
   What maintenance or replacement is recommended: _____

2. Heating coils, present condition: _____
   Are all pipes open to full flow of steam: _____
   Condition of supports: _____
   What maintenance or replacement is recommended: _____

3. Traps, present condition: _____
   Are traps in best possible location: _____
   What maintenance or replacement is recommended: _____

4. Hand valves and automatic control valves, present condition: _____
   Are hand valves provided for blowing out coils: _____
   Are hand valves provided for shutting off individual coils: _____
   Are check valves working properly: _____
   What maintenance or replacement is recommended: _____

5. Spray lines, present condition: _____
   Are spray holes or nozzles open: _____
   Does condensate from spray line drip on lumber: _____
   What maintenance or replacement is recommended: _____

(over)

II. HEATING AND HUMIDIFYING SYSTEM (continued)

6. Vents, present condition: _____
   Do vents open and close properly: _____
   What maintenance or replacement is recommended: _____
   _____

III. CONTROL SYSTEM

1. Recorder-controller, present condition: _____
   Is recorder-controller properly calibrated: _____
   Are capillary tubes protected: _____
   Are bulbs properly located and mounted for accurate readings of kil
   conditions: _____
   What maintenance or replacement is recommended: _____
   _____

2. Water supply
   Is water supply line to wet bulb open: _____
   Is wet-bulb water pan clean: _____
   Is drain line from water pan open: _____
   Is wet-bulb wick replaced regularly: _____
   What maintenance or replacement is recommended: _____

3. Air supply
   Is supply adequate, clean, and uninterrupted: _____
   Is compressor in good condition: _____
   Are water and grease traps in good condition: _____
   What maintenance or replacement is recommended: _____
   _____

IV. BUILDING

1. Doors, present condition: _____
   What maintenance or replacement is recommended: _____
   _____

2. Walls, present condition: _____
   Is protective coating adequate: _____
   What other maintenance is recommended: _____
   _____

3. Ceilings, present condition: _____
   Is protective coating adequate: _____
   What other maintenance is recommended: _____
   _____

4. Floors and walkways, present condition: _____
   What maintenance or replacement is recommended: _____
   _____

5. Rails and supports, present condition: _____
   What maintenance or replacement is recommended: _____
   _____

V. GENERAL CONDITIONS OF YARD AND KILNS
   Are yard tracks and transfer in good condition: _____
   Are kiln trucks in good condition: _____
   What maintenance or replacement is recommended: _____
   _____
   Are kilns and surrounding area neat and clean: _____